

LESSONS LEARNED

CATA

Fort Leavenworth

1 May 1986



INTELLIGENCE

NEWSLETTER - MAY 1986

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DEPARTMENT OF THE ARMY

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"Know the enemy and know yourself; in a hundred battles you will never be in peril. When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal. If ignorant of the enemy and of yourself you are certain in every battle to be in peril."

--Sun Tzu, The Art of War, 500 B.C.

1. "Know your enemy," that well-known axiom in all military circles, is the precursor to victory on the battlefield. This imperative is no less important today on the technologically advanced AirLand Battlefield than it was in the days of Sun Tzu.
2. The NTC Analysis Division of the Center for Army Lessons Learned focused primarily on the battalion task force intelligence system for this newsletter. These lessons learned are derived largely through the long-term observations of the observer-controllers of the NTC Operations Group and the intelligence personnel assigned to the OPFOR, as well as an assessment of the intelligence system by CATA's NTC Observation Division during recent unit rotations.
3. In its effort to "get the word out" to the rest of the Army, CATA provides these tactics, techniques, and procedures for your consideration and use. If your unit has identified any combat relevant lessons at the NTC or other training exercises, share them with the rest of the Army by contacting the Center for Army Lessons Learned, AV 552-2191/2132.

JOHN C. HELDSTAB
Brigadier General, USA
Commanding

MANEUVER

Destroying the Enemy's Mounted Reconnaissance

(FM 71-2, App I)

Successfully countering the enemy's mounted reconnaissance is the first and possibly most important step to ensuring a successful defense. Keeping the enemy scouts out of the task force sector presents a two part problem: How will the task force first acquire the enemy? How will it destroy him once he is acquired? This article identifies key points for counterreconnaissance planning and execution and provides options on how to kill the enemy after acquisition.

The counterreconnaissance plan must address how the enemy reconnaissance elements will be acquired and killed. The task force S2 identifies avenues of approach into the task force sector and identifies what type of reconnaissance assets might use them. He also identifies when the enemy mounted reconnaissance elements are most likely to move along these routes. The task force S3 uses this information to formulate the counterreconnaissance plan and to task units to execute it.

A successful counterreconnaissance plan is coordinated early, controlled by the task force S3, and is thoroughly rehearsed. Relying on the company teams to provide their own local security and on the scout platoon to acquire and destroy the enemy's mounted reconnaissance often results in gaps in the coverage through which the enemy will infiltrate. If the task force has a coordinated plan which efficiently uses all available assets, the enemy scouts encounter severe difficulties penetrating the defense.

Like all tactical plans, there are no hard and fast rules that say, "If this is always done, the task force will be successful." The following techniques offer some options to counter the regimental reconnaissance company.

Option 1: Attach a thermal-equipped tank platoon to the scouts and place it forward.

- \$ Prior coordination between the platoon leader, S2, and scout platoon leader is crucial.
- \$ The scouts and GSR acquire enemy targets and alert the tank platoon.
- \$ The tank platoon, which is the destruction element, is positioned forward in the task force area to overwatch the enemy's most likely avenue of approach during hours of limited visibility.
- \$ The tank platoon leader operates on the same net as the scout platoon leader and the S2 to rapidly receive instructions on the enemy location and direction.
- \$ The tank platoon intercepts and destroys the enemy scouts.

Option 2: Use the scout platoon to acquire and destroy enemy reconnaissance elements.

- \$ Scouts must man OPs and maneuver to destroy reconnaissance vehicles.
- \$ More viable when scouts are M3 equipped because of the 25 mm cannon, but the platoon may be spread too thin and gaps may result.
- \$ The only AT weapons that M113 equipped scouts have are TOWs and Dragons. Slow rate of fire and distinct signature compromise OP locations.
- \$ May use artillery, but adjustment is slow and accurate targeting is difficult at night.

Option 3: Designate a company team to provide a reaction force. (NOTE: This option is most effective in M2 equipped units.)

- \$ Repositions in and around the battle position based upon warning from the Scout platoon.
- \$ Must be designated and notified well in advance. The platoon leader must conduct reconnaissance of potential routes and coordinate with the S2 and scouts.
- \$ Platoon leader leaves the parent company net at dusk and enters the net the task force is using to coordinate counterreconnaissance activities.
- \$ M1/M2 task force uses either a tank or a mechanized infantry platoon as a reaction force. The mechanized infantry platoon can also engage dismounted infiltrators.

Option 4: Designate "no movement areas" for company team battle positions.

- \$ Companies can patrol to a certain limit beyond their positions; anything moving beyond these limits can be engaged.
- \$ "No movement areas" must be covered by direct fire weapons. The boundaries must be tied to easily identified terrain. The boundary nearest friendly troops must be well marked. It may be difficult to tie boundaries to terrain features in some areas of operation, such as the desert. The task force can use man made markers, such as directional chemical lights or flashlights, as an alternative.

Option 5: Use a company team in a forward screen role. This provides a strong counterreconnaissance capability, gives a measure of deception, and facilitates early engagement. A company team has assets to deal with any enemy reconnaissance elements which dismount as well. This company team withdraws to its primary battle position to fight the main battle.

The most successful counterreconnaissance plans are those that are coordinated and controlled at the task force level by the S2 and S3. The S2 identifies the most likely avenues of approach into the task force sector, when the enemy is most likely to send his mounted reconnaissance elements along these routes, and what will be required to counter that effort. The S3 formulates the counterreconnaissance plan and tasks the necessary units to execute it. The TOC actively supervises the effort to ensure it is coordinated and executed. The result is that the enemy reconnaissance effort is blunted, and he is forced to attack without information on the friendly force's disposition. This makes it much easier for the task force to defeat the enemy's main attack and retain its combat effectiveness.

COMMAND AND CONTROL

Establishment of a Task Force O&I NET

(FC 71-6, Chapter 2, 4)

Some task forces have successfully utilized a non-doctrinal operations and intelligence (O&I;) net to pass non-critical information which otherwise would have been passed over the task force command net. The successful use of a task force O&I; net is predicated on effective home station training, the preparation of detailed unit SOPs prior to arrival at the NTC, and a well-trained S2 who facilitates rather than screens the passage of vital information on the O&I; net.

The establishment and use of an O&I; net has several advantages:

- It clears the command net for critical information and instructions. If all reports -- scout spot reports, NBC reports, and intelligence updates -- are transmitted over the command net, it rapidly becomes overwhelmed. Critical information may not get through or may be ignored because of the constant traffic.
- The O&I; net permits TOC personnel to analyze non-critical information from reconnaissance elements before putting it out to the task force. Subsequent redirection of reconnaissance assets to confirm reports may be critical.

CANDIDATE O&I; NET FREQUENCIES

<u>NET</u>	<u>ADVANTAGES</u>	<u>DISADVANTAGES</u>
Bn Retrans	Retrans generally used only when TF is deployed over large area. Usually available for use as an O&I; net.	Restricts use of retrans net for intended purpose. TF net frequently required to maintain commo with forward elements or higher headquarters.
Bn AJ	AJ net usually not used when O&I; net most active.	In active EW environment, AJ net can be critical.
Scout Platoon Internal	No other units/nets affected.	C2 of scout platoon may be severely hampered.
Co AJ	Company AJ nets not frequently employed. Net usually available.	Forces the company to go to one of its platoon internal nets as an AJ net if company command net is jammed.

Table 1. Candidate O&I; Net Frequencies

Most task force CEOIs, however, do not authorize an O&I; net. Normally the CEOI authorizes a task force command, admin-log, anti-jamming, and retrans net. The CEOI authorizes command and anti-jamming nets for each company team and internal nets for each platoon.

Therefore, if an O&I; net is established, a frequency must be "borrowed" from one of those the CEOI authorizes.

The S2, S3, and CEO must agree on a candidate frequency, which they nominate to the commander as being the O&I; frequency (see Table 1, Candidate O&I; Net Frequencies). The commander then approves or disapproves and selects another frequency, or decides not to have an O&I; net at all.

ROUTINE AND PERIODIC O&I; NET USERS

<u>USERS</u>	<u>WHEN</u>	<u>FUNCTION</u>
S2	Routine	O&I; net control station receives reports from reconnaissance assets.
Scouts	Routine	Receive instructions from S2 or S3. Pass reports to TOC.
GSR	Routine	Receive instructions from S2 or S3. Pass reports to TOC.
TF controlled reconnaissance patrols from companies	Routine	Receive instructions from S2. Pass to TOC.
Counter-reconnaissance assets (tank/mech infantry platoons dedicated to destroying enemy scouts)	Routine	Receive instructions from S3. Coordinate activities with acquisition assets.
Company Teams (CO/XO)	Periodic-time specified by SOP or as directed by S2 on TF command net.	Receive intelligence update from S2. Pass routine operational reports to TOC.
Specialty Platoon (Mortars, Vulcan/Stinger, Engineer).	Periodic-time specified by SOP or as directed by S2 on TF command net.	Receive intelligence updates. Pass routine operational reports to TOC.

Table 2. Routine and Periodic O&I; Net Users

The O&I; net is operational in the offense while the task force is preparing to attack. During this time the S2 and the scouts are seeking all possible information about the enemy disposition.

Prior to the defense, the O&I; net is again operational when enemy reconnaissance elements are trying to penetrate the task force. The task force intelligence acquisition assets (scouts, GSR, and counterreconnaissance patrols) use the O&I; net to transmit spot reports to the S2. The S3 can use the net to direct counterreconnaissance assets to locations from which they can destroy enemy patrols.

TOC radios configured as in Table 3 enables the task force to maintain communications on all the sets the task force must operate.

TOC RADIO RECONFIGURATION

FSE--

1 Radio-FA Bn Fire Net (VFMED)
1 Radio DS FA Bn Command
1 Radio (aux) TF Command
1 Radio-TF mortar platoon

S3 TRACK--

1 Radio-TF Command
1 Radio-Bde Command
1 Radio-TF Admin-Log

S2 TRACK--

1 Radio-TF O&I;
1 Radio-Bde O&I;

NOTE: The S2 passes operational information from the O&I; net to S3 personnel. Monitoring the task force command net in the S2 M577 allows the S2 to keep abreast of the situation throughout the task force. If the MTOE does not authorize the S2 three net capability, he can use an An/GRA-39 to monitor the task force command net.

Table 3. TOC Radio Reconfiguration

The scout platoon must constantly monitor the task force command net to keep abreast of the tactical situation. If the O&I; net is different from their internal one, they can still monitor the command net by having the platoon sergeant keep one of his radios on task force command while the platoon leader monitors O&I;. If the platoon leader needs to come up on task force command, the platoon sergeant switches to O&I;.

The elements which periodically operate on the O&I; net must switch the radio they normally use to monitor the task force command net. While this takes the company team CO or XO off the command net, the company still remains abreast of the task force situation through whichever officer does not switch to the O&I; net.

There are times when units, especially the scouts, pass information directly on the command net, even if the O&I; net is operational. One of these times is when the scouts lose communications with the TOC. This situation is usually the result of the scouts and TOC being out of range of one another, or terrain masking. If the scouts cannot talk to the TOC, they should pass their reports directly to either the task force commander, the S3, or one of the forward company teams, who then relays it to the TOC.

Reconnaissance elements pass information directly on the task force command net when it is critical to the operation and no analysis is required. For example, the scouts see the lead elements of the enemy regiment as it launches its attack or locate an undefended bypass to the enemy obstacle system.

Some task forces use their scouts to aid in command and control by keeping them on high ground overlooking the objective during the offense or positioning them on terrain which overlooks avenues into the task force's sector. They will normally speak directly to company team commanders or the task force command group on the command net rather than the O&I; net.

An O&I; net clears the task force command net of a great deal of routine or unconfirmed information. To get an O&I; net permanently included in the task force CEOI, the commander makes the request to the Information Systems Command through the Division COMSEC account holder. This is a lengthy process, so the request must be forwarded as soon as possible after the commander identifies the requirement.

AVIATION

FARP Operations

(FM 1-104, FM 10-68, FM 10-69, FM 10-70,
FM 10-71, FM 100-2-2, Chap 2,3, and 5)

Forward Arming and Refueling Points (FARP) employment is a function of METT-T and the precise location of which is based upon IPB products. Given the threat of Soviet artillery, reconnaissance, and unconventional warfare units, passive measures are crucial to prevent the discovery of the FARP location.

The Planning Factors

There are three basic principles that a FARP must satisfy to provide adequate support to aviation units:

- \$ Meet mission requirements.
- \$ Provide timely support throughout the battlefield in all conditions.
- \$ Avoid enemy observation and engagement.

The following ideas have proven successful along with those listed in FM 1-104, paragraph 2-5:

Preparation

- \$ FARP class III/V Plt Ldr/NCO must receive FRAGOS, understand how the commander's intent affects them, and know the status of the battlefield (enemy situation and employment times).
- \$ Class III and V quantities must be based on airframe numbers and time on station.
- \$ Have a specific SOP that includes procedures for emergency samples, spills, standardized crew drill, and routine equipment care.
- \$ Ground navigational skills must be mastered in daylight as well as night time.
- \$ Ensure cross training of personnel to facilitate setup and 24 hour operational capability.
- \$ Train all personnel in full MOPP.
- \$ Plan prestock of Class V, forward of FARP locations for quick emergency ammunition resupply.
- \$ Conduct route and site reconnaissance during daylight hours if area is secure.
- \$ Determine the site location for primary and alternate positions.

Execution

- \$ Practice convoy operations such as backing of prime movers with trailers.
- \$ Prioritize ground maintenance support to Forward Area Refueling Equipment (FARE) and its prime mover.
- \$ Utilize airmobile FARE systems, when available.
- \$ Set up multiple refuel points as depicted in figure 2-2, FM 1-104.
- \$ Perform daily PMCS/care for FARE equipment with backup PLL on site (i.e., points for pump).
- \$ Provide redundant systems where possible to counter mechanical malfunctions.
- \$ Maintain a field TM library in a foot locker along with required forms and records.
- \$ Standardize set patterns of chemical lights since colors cannot be seen beyond short distances at night.
- \$ Utilize appropriate antennas for FM radio communication.
- \$ Always stress safety with emphasis on ignition and vapor sources.

The use of the stated references will assist you in developing your training program as well as your SOPs. The detailed planning, specific positioning, and smooth operation are critical in allowing the commander to mass his attack helicopter assets.

INTELLIGENCE

Task Force IPB Tips

(FM 34-80, Chap 4; FM 100-2-1)

The Task Force IPB is a continuous process which begins prior to the warning order and continues through the completion of the task force mission. The IPB is a significant part of what may be described as the "Staff Preparation of the Battlefield." As such, the S2 closely coordinates its development with the remainder of the task force staff throughout the operation.

The task force IPB process usually begins with some hard intelligence from subordinate units and higher headquarters. The process works in conjunction with reconnaissance and surveillance. During the defense, avenues of approach and go/no-go terrain are physically checked. In the offense, the initial templates provide the basis for the reconnaissance plan, once the enemy's weapons and obstacles are located by physical reconnaissance. Templates are continually refined throughout the battle and changes are passed to the commanders.

The task force IPB is as elaborate as the time available allows. It is significantly more streamlined at the task force than at higher echelons. Following the warning order, the S2 provides the commander a current situational template and a hasty analysis of the area of operation and forecasted weather with which he can begin developing his concept of the operation. The S2 examines the factors of METT-T from the enemy's perspective. He addresses the following imperatives:

- Offensive Operations

- \$ Where are the enemy's forces? His obstacles? His infantry positions? His fire sacks? His antitank weapons and other reserves? What is the intent of his defense?
- \$ Where is the enemy's likely counterattack routes?
- \$ What are his weaknesses?

- Defensive Operations

- \$ What information does the enemy have about you? What will he do to gain information about your defenses? What will his intell objectives be? What will be the routes and techniques he uses to get this information?
- \$ What are the possible mounted, dismounted, high speed air and attack helicopter approaches he can use? How many forces can he deploy on each approach? Where are possible SP artillery and ATGM overwatch positions? Where is he most vulnerable on each approach?
- \$ What are his likely tactics? Which approaches can he use? Where is he likely to deploy? Where is he going to move and how will he use his second echelon? What will he target for preparatory fires?

The S2 must then look at the operation from his own commander's perspective. He considers both the enemy's strengths and weaknesses with regard to how the task force can bring to bear its combat power against the enemy's weaknesses. The hasty intelligence estimate will enable the commander and S3 to begin developing the concept of the operation while the S2 refines his templates and surveillance, counterreconnaissance, and reconnaissance plans.

The S2 can now begin the process of refining the IPB templates to be used for the upcoming operation. There are a considerable number of sources within the task force TOC from which he can draw expertise:

- The task force FSO with his TACFIRE system and fire support nets can provide information about the types and locations of targets and battle damage assessments from missions fired. He is also a valuable source for the enemy indirect fire employment doctrine and weapons' capabilities.
- The task force engineer can provide information on trafficability and avenues of approach within the task force sector.
- The ADA officer, Air Liaison Officer (ALO), aviation air battle captain, and S3 air can provide air avenues of approach.
- The chemical officer can provide information on the use of chemicals, smoke, and their effects. He is also a source of information on the effects of weather and terrain on chemical operations.
- The S3 and commander can provide advice on the conversion of doctrinal templates to a situational template based upon their greater tactical experience and knowledge of the effects of terrain on the employment of weapons systems.

Weather

Weather is a significant variable in determining how the commander will fight the battle being planned. The S2 looks at weather to assess how it will assist and hinder both his unit and the enemy. When briefing weather, he focuses on the significant impact it will have on each subordinate unit. The S2 highlights the impact on the task force of illumination, windspeed and direction, precipitation, time of sunrise and sunset and its direction relative to the task force, humidity, and temperature gradient. For example:

- "Team Alpha, there will be a heavy ground fog around sunrise which should help conceal your movement at OBJ BOB."
- "Team Bravo, your reconnaissance patrol can expect a clear but moonless night. There will be about 2% illumination. Navigation and target detection will be difficult."
- "Smoke generator section, the winds tomorrow will be from the northwest at 8 kph and we anticipate inversion conditions to last about 2 hours beginning at 0500 hours."

Terrain

The S2 analyzes terrain using OCOKA. A useful technique is to conduct this analysis in terms of how we anticipate the enemy will operate. The S2 mentally walks through each avenue of approach at the enemy rate of movement in the given terrain. For example, during defensive operations some of the questions he may consider are:

- What routes is he most likely to take?
- At what points must he slow down?
- Where can we first see him?
- Where will he first see us?
- Where can we best be positioned to engage him with our weapons systems (primary, alternate, supplementary positions)?
- What are the high payoff target priorities?
- How will he come down these approaches? Mounted? Dismounted? What type of formation?
- Where can we best reinforce the terrain with obstacles (to include FASCAM)?
- How can indirect fires best support this battle? What part of the enemy is most vulnerable and, if hit, best gives us the biggest gain (high payoff targets)? What tasks should be given? Who should have responsibility for shooting these fires?

Development and Use of NAIs

Another aspect of the IPB is the development of Named Areas of Interest (NAI). In the task force area of operation there will be many potential named areas of interest. Simply stated, an NAI is a place where the enemy must do something. The task force S2, in conjunction with the S3 and commander, must identify those NAIs which are critical to support the commander's concept of the operation. The commander's decision on how he will fight the battle largely determines which NAIs are critical. The NAIs are chosen to identify those enemy actions to which the commander must respond. Some of these NAIs may become target areas of interest (TAI) later as the plan develops. A critical aspect in the development of NAIs is the ability to adequately monitor them.

The task force has several assets available to provide surveillance of the selected NAIs. Some of these are:

- Scouts
- Dismounted patrols from maneuver companies
- Aerial observers
- GSRs
- Deep reconnaissance patrols (from maneuver companies or scouts) in stationary OPs arrayed throughout the depth of the task force area of operations.
- REMS

Once NAIs are selected, they not only must be monitored, but the intelligence gathered from them must be transmitted to the staff and commander so that appropriate actions may be taken. NAIs, by definition, are selected so as to enhance our knowledge of Soviet intentions.

"Wargaming"

The commander, XO, S2, S3, S4, and FSO (and occasionally other members of the staff) now wargame courses of action. Wargaming underscores fire support and other combat support assets, as well as maneuver. A common mistake is to wargame only the maneuver aspects of the operation. The S2 develops the enemy's possible courses of action. This "wargaming" process is a continuously revolving discussion among the participants. The most important result of this wargaming process is the commander's concept of the operation. The products of the IPB are critical to the success of the wargaming process. The situational and event plates provide the structure comparing enemy and friendly courses of action. This refines the task force's courses of action supporting the commander's intent. The wargaming process results in the finalization of operational graphics depicting the commander's intent. IPB products such as TAIs and NAIs are converted to operational graphics by the S3/Commander. These operational graphics facilitate continuity of task force operations should the task force commander become a casualty.

Locating Enemy Fire Sacks

(FM 100-2-1, Chap 6)

An extremely useful technique that S2s have developed is the use of range fans depicting the maximum effective range of weapons found in the motorized rifle platoon covering fire sacks between strong points. When the S2 develops the template showing the expected platoon and weapons, he draws in range fans for ATGMs, T-72 main gun, 73mm main gun, etc. The S2 uses these range fans to identify possible fire sacks. These range fans enable the commander and S3 to plan axes which best avoid fire sacks and greatly assists in the development of a scheme of maneuver. The task force commander is thus better able to concentrate on the seams between Soviet strong point defensive positions.

Companies can use the templates and range fans to avoid flanking fires from enemy platoons. They can then engage one MRP at a time while avoiding flanking fires from other MRPs in the motorized rifle company.

Obviously, the enemy's platoon positions require verification by ground or air reconnaissance, and this may cause the range fans to be adjusted. This is usually a relatively minor adjustment which can be done quickly if the initial work has been done correctly. The range fans are a significant aid to maneuver planning.

Reconnaissance In The Offense

(FM 34-80, Chap 4; FM 100-2-1, Chap 6)

Reconnaissance is continuous and everybody's business.

- The task force first finds the enemy main body, not just his reconnaissance elements.
- The task force develops information about what areas his weapon systems cover.
- The S2 and staff analyze information on:
 - \$ The trafficability of attack routes.
 - \$ Presence of obstacles.
 - \$ Suitability of overwatch positions.
 - \$ Any other information the commander deems appropriate.

This is similar to the backwards planning process. Look at the enemy, find where he is weak, figure out how you can take advantage of that weakness, and then figure out how to get there.

Weakness of enemy defenses are those locations where he can't stop the attacker. To determine weaknesses, you must know:

- The location of obstacles and the positions of defending infantry and AT weapons.
- Where anti-armor weapons are oriented and what they can cover.

Locations to the flank of enemy positions often aren't weaknesses -- they may be fire sacks, the strength of the defense.

In movements to contacts or hasty attacks, the need for information about the enemy's defense is just as important as during the deliberate attack. The task force's lead elements (scouts and company teams) develop this information while avoiding decisive engagement. Sufficient action must be taken to force the enemy to react while maintaining freedom of maneuver. Obstacles, weapons, and flanks must be found. Indirect fires must be adjusted on to the enemy. This "reconnaissance in force" is a necessary prelude to commitment of the task force to any course of action.

Successful Task Forces:

- Keep the enemy position under continuous observation. Put in a couple of OPs -- have them sit and watch. Over the course of a day, a smart soldier/leader will collect and report much more information that a moving patrol might see. Any competent defender will be continually upgrading his defense, so what was true at noon might not be true at dusk.
- Push patrols through the depth of the enemy positions.

Reconnaissance In The Defense

(FM 34-80, Chap 4; FM 100-2-1, Chap 5)

The key to a successful defense is maximizing the effects of terrain by careful positioning of weapons and obstacles. This must be done by physical reconnaissance.

- A map reconnaissance is only a useful start for planning.
- Make the tentative plan early and get leaders on the ground.
- Use subordinate leaders and staff to aid in his reconnaissance.
- Divide the sector/BP into areas and assign subordinates reconnaissance responsibilities.

Intelligence Updates

Many task forces use intelligence updates shortly before LD time or at other appropriate times such as prior to the assault. This technique involves a preplanned assembly of the battalion orders group. At this update, leaders are briefed on intelligence gained since the OPOD briefing. The task force commander briefs his subordinates on any final modifications to the original plan based on this intelligence. Final face-to-face coordination is made.

The timing depends upon how long it takes to assemble subordinate commanders. Normally 2 hours prior to LD time is sufficient. The assembly point has to be well forward and easily identifiable. Some battalions use an "intelligence dump" over secure radio instead, especially if no modification of the plan is required.

Actual assembly of the orders group for the intelligence update is beneficial, especially:

- When plans must be modified and new graphics are required.
- To facilitate final face-to-face coordination after subordinates have to finalize their plans.

Counters To Enemy Electronic Warfare

(FM 34-80, Chap 7; FM 100-2-1, Chap 15)

Soviet units on the battlefield demonstrate a very well-developed capability to identify and jam specific nets. The maneuver command and fire support nets are most frequently targeted. Fire support nets are particularly vulnerable to disruption by jamming and deception because of their normally heavy volume of traffic. Normally, the Soviet EW personnel will work to identify as many nets as possible before the commencement of an operation and wait to jam key frequencies once execution begins. They have also proven quite adept at electronic deception in lieu of jamming by transmitting false information over task force nets at crucial moments during the battle.

The Warsaw Pact, while formidable in its EW capability, can be beaten. Effective task force SOPs must provide simple procedures to:

- Initiate code words or visual signals to alert the net that it is being jammed and change frequencies, if necessary.
- Re-establish communications if lost.
- Leave someone on the net to bring up stations not receiving the initial directive. (EW personnel are notorious for sending false signals on the old net to deceive those friendly units still there.)
- Switch to an alternate frequency at a predetermined time(s) before the beginning of an operation.
- Establish "work through" procedures when it becomes known that jamming is in progress.

The absolute key to counter jamming is radio discipline. Radio operators must become experts in proper communication procedures. The net control station (NCS) must actively enforce discipline on the nets. When a unit can work through jamming, it must be extremely aware of security; if the unit's unsecured nets can be jammed, they can also be monitored. Finally, the enforced use of authentication codes is the simplest, most effective means to counter deception activities.

FIRE SUPPORT

Role of the FA Battalion S2 in the Defense

(FM 34-3, Chap 4; FM 34-80, Chap 1;
FC 6-20-10, Chap 5; FC 6-34-10, Chap 2)

The field artillery battalion S2 is a vital link in the preparation, planning, and execution of a fire plan. During the preparation and planning phases, the FA battalion S2 accomplishes the following:

- Face-to-face coordination with the brigade S2. The FA battalion S2 obtains IPB products from the brigade and the other task forces with which he updates his IPB. When possible, the FA battalion S2 coordinates with each task force S2 regarding their intelligence and scheme of maneuver.

- Obtains all TAI/NAI locations from the brigade S2 and compares them with his data. Later in the IPB process, TAIs which are essential to the commander's intent may become high value targets (HVT), those targets which are crucial to the enemy's success. For example, a task force conducting a defense at a river, the enemy's engineer bridging capability is an obvious HVT.

- Coordinates with the brigade and task force FSO and FA battalion S3 for required observation assets (FO teams, COLT, OP/LP and AN/TPS-25A/58B Radar) to overlook the TAI/NAI's "trigger points." He accomplishes this by analyzing the best available terrain and by analyzing the enemy's courses of action.

- Determines the location of enemy mortars and artillery. The S2 may nominate targets for attack by division EW assets as part of the overall targeting effort. CEWI assets that could assist the FA battalion S2 include direction finding radars that locate the enemy and jamming radars to attack command and control frequencies during a critical time of the battle.

- The FA battalion S2 can assist his S3 by analyzing:

- \$ Terrain: recommends firing battery positions based on likely enemy avenues of approach (i.e., firing units are positioned to the flanks of these enemy avenues of approach to preclude being overrun), avoid hill masses which would restrict firing and trafficability.

- \$ Weather: information that may hamper the artillery's capability to influence the battle.

- \$ Range and capability of enemy indirect fire systems.

- \$ The enemy's rate of march based on given terrain and weather which influences the position of the artillery "trigger points" for all the targets.

- \$ Likely enemy courses of action.

- \$ Integrate the latest intelligence into battery defensive plans.

During the execution phase, the FA battalion S2 has the capability of refining the fire plan based on the enemy's course of action. For example, (see Figure 1), the IPB process depicts three main enemy axes of approach. With this data and the commander's intent, the FSO can build the fire support plan. He plans targets along the mobility corridors using the TAI as HVT. The S3, along with the S2 and FSO, develops "trigger points" (decision points) which are used to initiate fire missions that engage the enemy at the TAI. As the battle commences, the unit confirms the enemy will take Axis 1 by observing NAI. Based on this information, the FA battalion S2 recommends cancelling Groups A1B, A2B, and A5B and shifting more firepower to Groups A4B and A6B to the S3. While A3B is fired, the battalion FDO directs the other firing units that were originally firing the cancelled group to compute data for the new targets. Thus, the S2 refines the fire plan which allocates increased firepower to key targets. The S2 recommends that the task force cancel the priority targets on Axis 2 and 3. The S2 accomplishes this from the FA battalion TOC while monitoring the battle on the brigade intelligence net as well as eavesdropping on other nets.

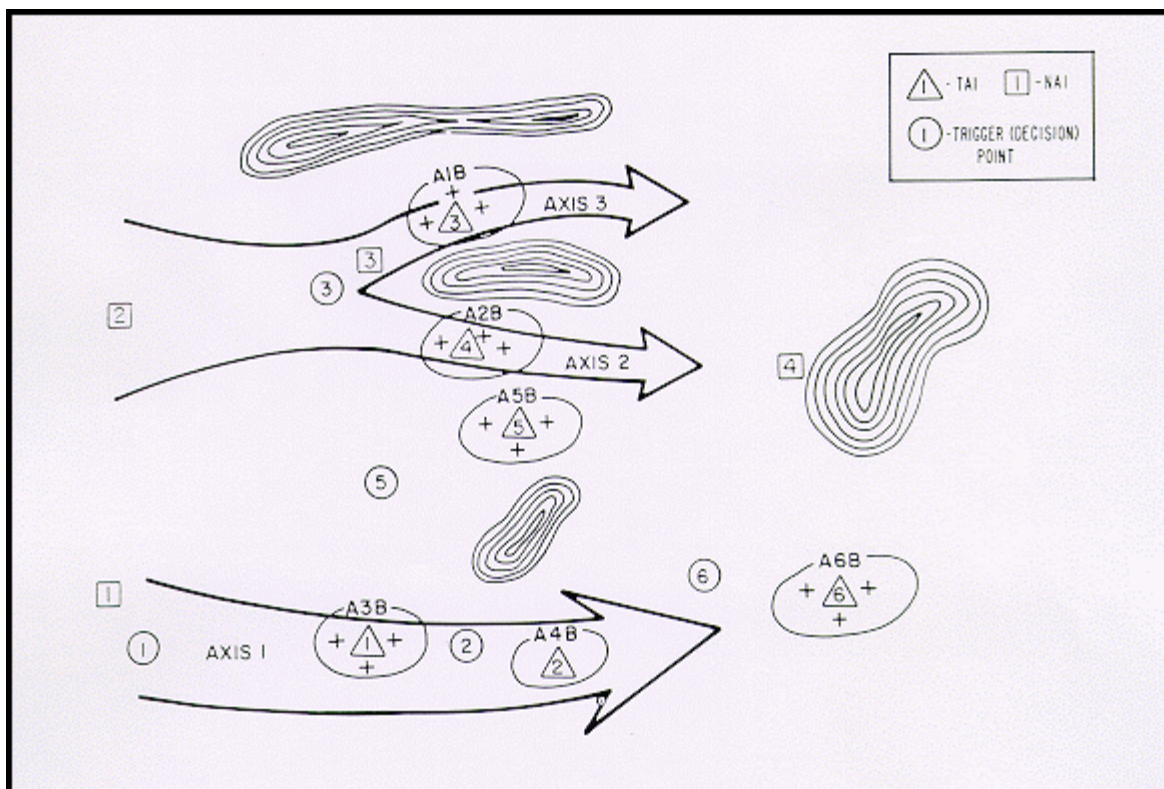


Figure 1. Execution Phase of the Battle

MOBILITY/COUNTERMOBILITY/SURVIVABILITY

Construction of Deliberate Vehicle Fighting Positions

(FM 5-103, Chap 4)

Fighting vehicles which cannot achieve a full hide or defilade positions have little chance for survival against a strong enemy attack. Task forces at the NTC increasingly use engineer earthmoving equipment for the construction of vehicle fighting positions and less for anti-tank ditches. These survivability positions are basically the same as shown in FM 5-103, except that either a full turret defilade or a hide position is an essential, not a desirable feature, of the position. The "firing step" must be sloped so the firing vehicle may adjust its degree of hull defilade to allow various combinations of defilade and fields of fire. Vehicles can move from defilade to firing positions quickly. They can remain hidden until it is time to engage the enemy. They are very difficult to detect and can drop to full defilade if receiving effective fire. Since natural firing positions are limited in numbers and locations, the ability to construct positions can be critical. Construction of proper fighting positions which allow the defender to properly disperse weapons is essential to the defense.

The chain of command must select the location of fighting positions. The position must be checked by a vehicle to ensure adequate coverage of assigned sectors. The unit's leaders must supervise the construction to ensure that the position is the right depth before letting the bulldozer move.

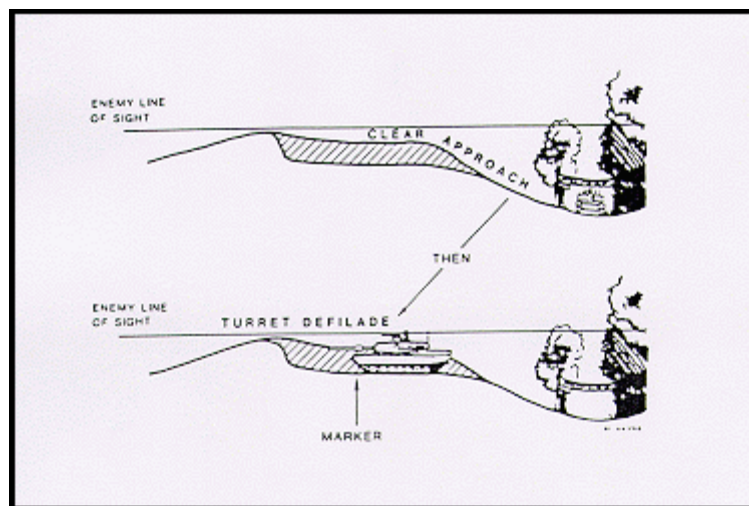


Figure 2. Vehicle Fighting Positions

Dismounted infantry may require engineer support to dig fighting position. Use of backhoes and scoop loaders greatly reduces construction time for dismounted fighting positions. Construction of fighting positions for dismounted infantry should receive a high priority due to their vulnerability to indirect fire. Squad APCs must, by SOP, carry a basic load of materials required to construct overhead cover. Construction of infantry fighting positions must be carefully monitored to ensure that soldiers can both effectively fight and observe while protected by overhead cover.

AIR DEFENSE

The Stinger Team in the Heavy Task Force

(FM 44-18, App D)

The Piggyback Technique -- An Interim Solution

Stingers are normally attached to company teams in offensive battles at the NTC. When attached to company teams, they are normally "piggy-backed" on armored vehicles which increases the Stinger's survivability and mobility. With the Soviet's large indirect fire threat, the need to provide Stinger teams protected mobility using the "piggy-back" method is imperative. The Stinger gunner rides with either the FIST or the infantry company XO. The assistant gunner normally follows with the remainder of the team's basic load of missiles in his 1/4 ton (HMMWV) at the company or task force combat trains. Disadvantages of the "piggy-back" technique are:

- Company team vehicles don't stop until after the unit begins taking casualties from enemy air.
- The two-man Stinger team is separated.
- Difficulty in getting early warning down to gunners.
- Leaves the Stinger gunner with limited or no dedicated communications.
- Unable to see when "button-up" in a track.
- Lack of flexibility for positioning which contributes to degraded effectiveness.

In the defense, Stinger crews must get out of the tracks and into firing positions away from company teams. This concept applies unless the sector is very deep and maneuver across large distances is required. In such cases, the better use of Stinger, as in offensive operations, is in a track. The best defenses are seen when the task force ADA officer centralizes ADA under his control and sets up "zone" coverages. Class V must be prestocked and dug in.

Early Warning

The piggy-back technique improves Stinger team effectiveness by:

- adequate early warning
- dedicated ADA C3I
- effective TSOPs

Timely early warning to all weapon systems in the company team, including Stinger, improves: target detection

- identification and engagement of enemy air
- warnings that friendly air is in the area

The section sergeant can provide early warning to the Stinger gunners over the task force command net through the company team commander (see figure 3).

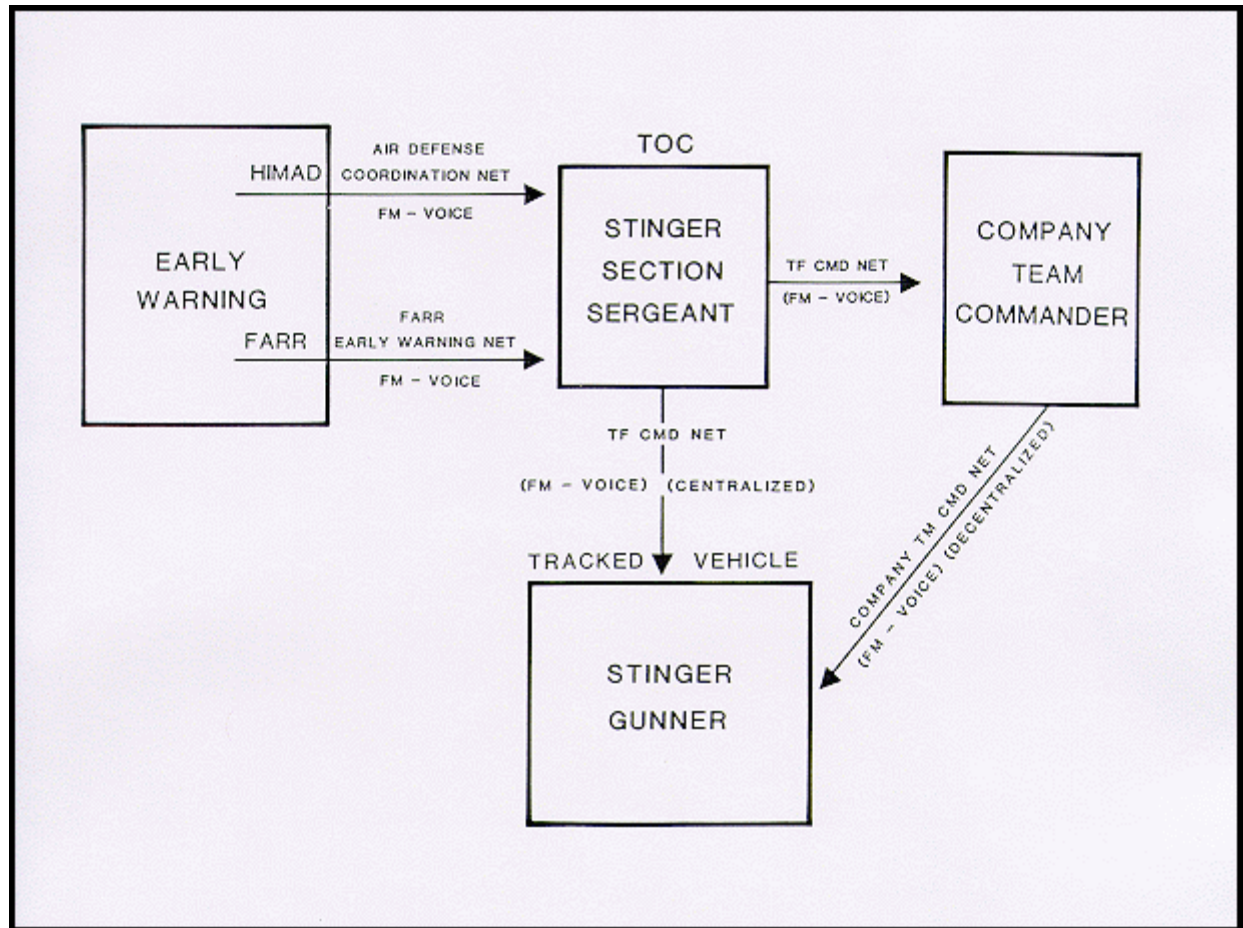


Figure 3. Stinger Early Warning

Early warning to teams and platoons utilizing the "Cardinal Direction" method is simple and fast. For example, "Enemy air coming in from the East" is sufficient.

Air defense and operational flexibility can be enhanced by effective standardized TSOPs which establish:

- Engagement dismount cues

- \$ When infantry dismounts, take up firing position.

- \$ When early warning is received and the tracked vehicle stops.

- Engagement termination cues

- \$ All targets destroyed.

- \$ Departure of enemy aircraft by early warning net.

- \$ Ground tactical situation requires the vehicle to fire and maneuver.

- \$ The infantry remounts to move.

The ADA Section Sergeant's MSCS overlay includes two early warning concentric circles which indicate to the Section Sergeant when targets present themselves as a potential threat to the task force. One alert line will be approximately 15 kilometers from center of mass of the task force and be utilized for high performance aircraft (i.e., MIG 23 and SU 25); the other, for rotary wing aircraft (i.e., MI 24 and MI 28), is approximately 10 kilometers from center of mass. An example is illustrated below.

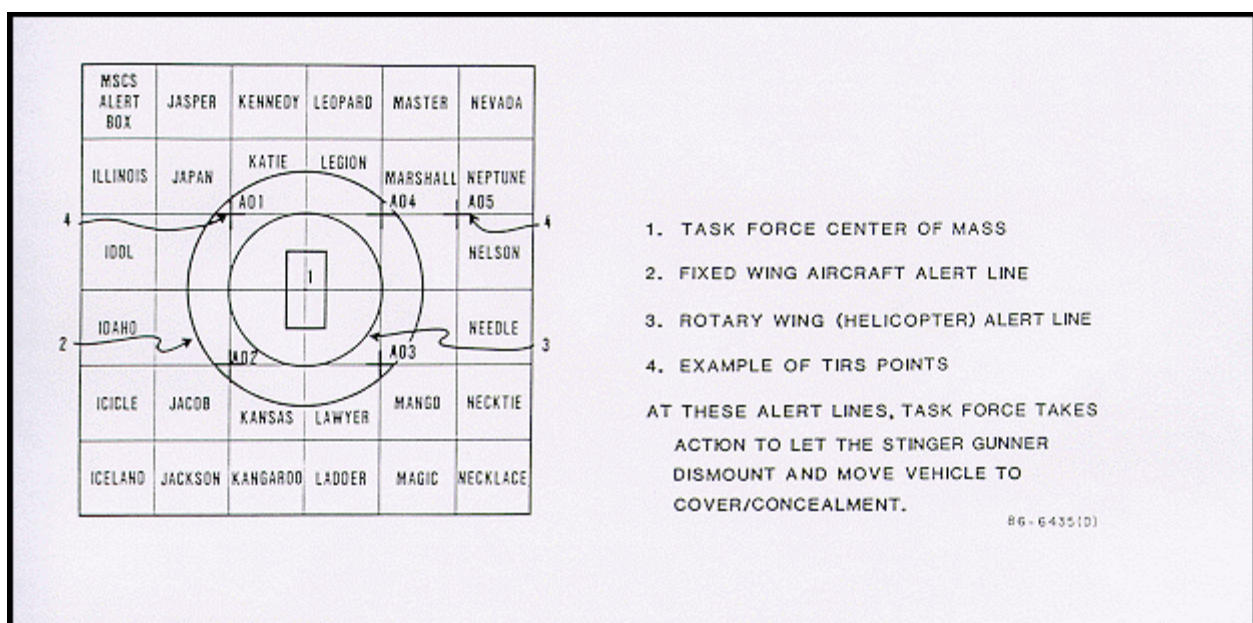


Figure 4. MSCS Overlay

COMBAT SERVICE SUPPORT

IPB and Logistics Planning

(FM 100-10, Chapter 3)

The intelligence preparation of the battlefield (IPB) impacts on combat service support planning as well as maneuver planning. IPB at battalion level is a process conducted by the S2, the products of which should routinely be used by CSS elements. Each of the five steps of the IPB can be used by the CSS planning staff to tie the IPB process with the logistical planning process.

Evaluates the threat (Step 1)

- \$ Requisition supplies based on the commander's intent and threat analysis. Begin planning to push these supplies forward.
- \$ Identify alternate and main supply routes (MSR) that best support the disposition of the units.
- \$ Begin preparation for the defense of the battalion trains based on current threat analysis (Rear Battle).

Evaluate the battlefield (Step 2)

- \$ Identify likely fire sacks that could cause excessive ammunition expenditures.
- \$ Ensure CSS graphics are coordinated with maneuver.
- \$ Position CSS units to reduce resupply turnaround times and best support the commander's intent.

Conduct terrain analysis (Step 3)

- \$ Ensure trains have adequate cover and concealment.
- \$ Verify that road networks in the area of operation can support the logistics plan.
- \$ Plan supply routes that are coordinated with all users.

Conduct weather analysis (Step 4)

- \$ Analyze potential effect on CSS operations.
- \$ Anticipate requisition of supplies in response to weather in support of maneuver unit operations; plan to push forward.

Develop a decision support template (Step 5)

- \$ Evaluate the CSS plan to support the commander's intent in countering the most probable enemy courses of action.
- \$ Develop contingency plans that address other potential enemy courses of action.

On-board Vehicle PLLs to Sustain the Force
(FM 71-2J, Chapter 8)

The mission needs of the AirLand Battle rapidly can overstretch the normal process for requisitioning and receiving class IX repair parts. Units must identify critical or high demand repair parts to maintain combat vehicles during continuous operations. The factors of METT-T will ultimately determine what is transported. One successful unit carried the following PLL items on board their combat vehicles at the NTC:

- M60/M-1 Tank

- \$ Center guides (10 each)
- \$ End connectors/wedge bolts (10 complete sets)
- \$ Sprocket bolts (4-5 complete sets)
- \$ Road wheel nuts (5-10 each)
- \$ Track block (3-4 each)
- \$ Primary and Secondary Fuel filters (1 set)
- \$ Fuel/Water separator (1 each)
- \$ Breech mechanism parts (assorted)
- \$ Firing mechanism parts (assorted)

- M-1 Tank

- \$ Skirt pins (5-10 each)
- \$ Gasket for fuel filter housing (1 each)
- \$ Wear plates w/bolts (2 complete)

- M113 APC

- \$ Fan belts (1 set)
- \$ Voltage regulator (1 per plt)
- \$ Fuel filter (1 each)
- \$ U-joint bolts (2 each)
- \$ Neutral safety switch (1 per plt)
- \$ Track pins (2 each)
- \$ Track blocks (2 each)
- \$ Quill shaft (1 each-cold weather)

- M109Q2/A3 155 mm Howitzer

- \$ Primary and secondary fuel filters (1 each)
- \$ Air filters (2 each)
- \$ End connectors (5 each)
- \$ End connector wedge bolts (5 each)
- \$ Sprocket mounting bolts (3-5 each)
- \$ Breech mechanism parts (assorted)
- \$ Firing mechanism (2 each)
- \$ Road wheel lugs (3-5 each)
- \$ Collimator lamps (3 each)
- \$ Instrument lamps (2 each)
- \$ Batteries for aiming post lights (4 each)

Far Forward Medical Care

AirLand Battle doctrine stresses far forward medical care. Far forward medical care poses a significant challenge to both the maneuver and medical leaders. Historical analysis of battle injuries point to a lesson learned: that if immediate lifesaving treatment with early resuscitation and stabilization is completed within the first thirty minutes of injury, the patient has an excellent chance of survival thru the evacuation process.

Medical personnel on site within thirty minutes dictated the need to establish a casualty collection point (CCP) forward of the battalion aid station but to the rear of the forward line of own troops (FLOT) and improved doctrinal guidance on the evacuation process.

TRADOC Pamphlet 525-50 addresses the evacuation process and establishment of CCPs. The process starts with a maneuver unit conducting buddy aid and reporting casualties. The Battalion Surgeon or PA regulates the dispatch of additional medical assets from the combat trains to augment established CCPs and requests ambulance support from the Medical Company to come forward. The Company XO or ISG has the responsibility to make the evacuation process happen from the point of injury to the treatment team located in the CCP. He can do this by requesting treatment teams to move to the actual point of injury or forming litter teams from the FLOT to the closest point to which aid vehicles can be brought forward. Another option is to use organic vehicles such as those in the maintenance section assist in the evacuation process, especially during mass casualty situations.

Once back at the CCP the decision of air or ground evacuation will be based on METT-T and the patient's condition.

The desired choice for urgent patients is air ambulance which will operate as far forward on the battlefield as the tactical situation permits.

Far forward medical care requires close coordination of casualty evacuation planning with the TF TOC to include intelligence interface to selected CCPs sites that provide optimum coverage of high casualty area. Far forward medical care also requires medical personnel who are proficient in terrain driving and battlefield survival tasks. Medical evacuation and treatment of casualties presents a significant leadership challenge to both maneuver and medical leaders.

Location of the EPW Collection Point

(FM 71-2, chap 8)

The location of the enemy prisoner of war (EPW) collection point within the battalion task force area often violates control or security considerations. Many successful units locate the EPW collection point approximately 50 meters from the Admin/Log Center (ALC) but within the perimeter of the combat trains. This location permits adequate security, prevents the EPWs from gaining access to overall ALC operations, and allows the S1 to maintain positive control of rapid EPW evacuation procedures.